To: Chris Horn[chris.horn@dot.gov]; Houk, Jeff (FHWA)[Jeff.Houk@dot.gov]; karen.perritt@dot.gov[karen.perritt@dot.gov]; Henderson - CDOT, Vanessa[vanessa.henderson@state.co.us]
Cc: Jackson, Scott[Jackson.Scott@epa.gov]; Patulski, Meg[patulski.meg@epa.gov]; Berry, Laura[berry.laura@epa.gov]; Dresser, Chris[Dresser.Chris@epa.gov]; Anderson, Carol[Anderson.Carol@epa.gov]; Odendahl, Steve[Odendahl.Steve@epa.gov]; Dubey, Susmita[dubey.susmita@epa.gov]; Denawa, Mai[Denawa.Mai@epa.gov]
From: Russ, Timothy
Sent: Fri 11/18/2016 8:20:26 PM
Subject: Information Transmittal to FHWA/CDOT: I-70 East Project PM Hot-spot Modeling

Hi Chris, Jeff, Karen, and Vanessa,

Based on the Cooperating Agencies consultation meeting of October 25, 2016, subsequent information provided by FHWA, and on our EPA-FHWA conference call of November 17, 2016, EPA offers the below information regarding the I-70 East project's conformity determination evaluation for PM_{10}. The first item is with respect to the selection of the La Casa air monitoring location, and its three years of data, for the background monitor for the PM_{10} hot-spot modeling. The second item addresses EPA's recommendation to FHWA regarding a sensitivity analysis for the for the PM_{10} hot-spot modeling.

Please let me know if there are any questions.

Thanks!

Tim

Tim Russ
Environmental Scientist
USEPA Region 8
Air Program
1595 Wynkoop Street (8P-AR)
Denver, CO 80202-1129
Ph. (303) 312-6479
Fax (303) 312-6064
e-mail: russ.tim@epa.gov

1.) Change to a Different Background Monitor for the PM_{10} Hot-spot Modeling:

During the October 25, 2016 inter-agency consultation meeting, and as confirmed by FHWA in an email dated November 2, 2016, we were advised that CDOT/FHWA were considering using the CDPHE La Casa monitoring location as being more representative of PM_{10} background level for the project rather than the CDPHE Commerce City monitor whose background monitoring values had been used in the Supplemental Draft EIS (SDEIS) and the FEIS. It is our understanding that CDPHE had suggested the use of the La Casa monitor as it is about ¾ of mile west of the I-25/I-70 interchange and typically upwind of the project. Also, CDPHE felt the Commerce City monitor could be showing influences from nearby stationary sources.

EPA agrees this monitor is appropriate to use as the background monitor for this hot-spot analysis now that three years of CDPHE-certified data are available. We also concur that the value of 73 $\mu g/m^3$, as the second highest reading from the last three years, should be used for the background value for the PM_{10} hot-spot modeling. This is explained below. If CDPHE also concurs with this 73 $\mu g/m^3$ background value, then no additional consultation is necessary. Please advise us of CDPHE's concurrence or if CDPHE has a different opinion.

La Casa (CASA)
Region: Denver
Monitoring Station
4545 Navajo Street
SAROAD:
AQS ID: 080310026
Latitude: 39.779460
Longitude: -105.005124
Reporting capabilities (hourly)
SLAMS: CO, PM10, PM2.5
NAMS: O3, SO2
SPM: NO, RD, RS, TEMP, WD, WS

EPA's November, 2015 PM Hot-spot modeling guidance ("Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and

Maintenance Areas") notes the following in section 9.3.4 *24-hour PM_{10} NAAQS*:

Calculating Design Values and Determining Conformity

The 24-hour PM_{10} design value is calculated at each receptor by directly adding the sixth-highest modeled 24-hour concentrations (if using five years of meteorological data) to the appropriate monitor value for the 24-hour background concentration from three years of monitoring data, based on Exhibit 9-6.[153] Exhibit 9-6: Monitor Value Used for Design Value Calculation

Number of Background Concentration Values from the Monitor	**Monitor Value Used for Design Value Calculation**
< 347	Highest Monitor Value
348 -695	Second Highest Value
696 -1042	Third Highest Value
1043 -1096	Fourth Highest Value

PM_{10} data from the La Casa monitoring site are provided in the table below:

POC 1 1 in 3 Sampler

Year	N	Highest value	2nd highest	3rd highest	4th highest
2015	119	55	48	44	43
2014	127	66	65	62	62
2013	122	81	73	56	45

"N" = the number of days of valid data recovery.

NOTE: There are actually three PM_{10} monitors co-located at the La Casa monitoring location. POC#1 is a "1 in 3" sampler and takes a sample every 3rd day; it is our understanding that this is the primary monitor as so designated by CDPHE. POC#2 is a "1 in 6" sampler and takes a sample every 6th day and POC#3 is a continuous monitor and samples every day.

As the number of days of data recovery at the La Casa POC#1 monitor is 368 (119+127+122= 368), EPA's hot-spot guidance indicates that the **second** highest value, **73µg/m^3** is appropriate to use as the background value for the PM_{10} hot-spot modeling. This assumes that the method in Section 9.3.4 of the PM hot-spot guidance is used (i.e., with a total number of background concentration values between 348-695, the appropriate monitor value is the second highest value).

2.) Revised PM_{10} Hot-spot Modeling for Western End (Swansea) Portion of Project:

In reviewing the revised PM_{10} hot-spot modeling information for the western end of the project, which is now split into two adjacent portions, EPA recommends that a sensitivity analysis be performed. This sensitivity analysis is needed in order to fully evaluate the potential for the possible influence (or lack thereof) of emissions from the I-25/I-70 Interchange with respect to the Swansea community. As noted in our conference call of November 17, 2016, please contact Chris Dresser at Region 8 to discuss this recommended sensitivity analysis.